Preliminary Science Flight Report
Operation IceBridge Antarctica 2011

Flight: **GV-FL02**
Mission: **LVIS-Pope01**

Flight Report Summary

Aircraft	**NSF G-V (N677F)**
Flight Number	2
Flight Request	118003
Date	Saturday October 8th, 2011, DOY 281
Purpose of Flight	Operation IceBridge Mission, LVIS Pope
Take off time	10:45 local time from Punta Arenas (SCCI)
Landing time	21:10 local time at Punta Arenas (SCCI) on October 8, 2011
Flight Hours	10.4
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	• High-altitude survey (~42,000 ft pressure altitude) of grid lines • Completed mission as planned.
Geographic Keywords	Antarctica, Pope, Thwaites, West Antarctic Ice Sheet, WAIS
ICESat/CryoSat Track	Grid lines cross numerous Icesat tracks
Repeat Mission	Overlap with previous IceBridge data over Pope/Thwaites area

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
LVIS	☑	☒	☑	45 GB	None
POS/AV (510 + 610)	☑	☑	☑	5 GB	None
LVIScameras(2)	☑	☒	☑	25 GB	Not operational during first 2 grid lines
G-V Onboard Data	☑	☑	☑	40 MB	None

Mission Report (Michelle Hofton, Mission Scientist, Instrument Operators: David Rabine, Shane Wake)

The second LVIS NSF G-V flight surveyed a series of grid lines over the Pope glacier. Seven, ~100km long lines parallel to the coast, spaced 20km apart, extending from the grounding line to about 150km inland were surveyed. All planned lines were surveyed. The survey is part of the overall deployment plan to collect grid data over a large region that encompasses the entire Antarctic Peninsula to the Getz Coast. With PIG and the Peninsula cloudy, the Thwaites-Pope area was the most promising target for the day's flight.

The plane took off slightly ahead of schedule and climbed to 42,000 ft during the transit. Both transits to and from the survey area were partially cloudy, but some sea ice data was collected in the Bellingshausen Sea and close to Pope. Weather over the survey area was clear, as predicted. The last 20km of the two grid lines closest to the coast had some patchy cloud cover.

The LVIS sensor worked very well. Data was successfully collected over nearly 100% of the survey lines.

The camera system lost power shortly after arriving at the survey area (but operated over the sea ice prior to this). Power was switched to batteries in the cameras and they were restarted about an hour later and worked throughout the remainder of the flight. It appears that the cold conditions at altitude reduce the power system capability. The power distribution will be altered to better balance the load on future flights.

Individual instrument reports from experimenters on board the aircraft:

LVIS: The LVIS system worked well.

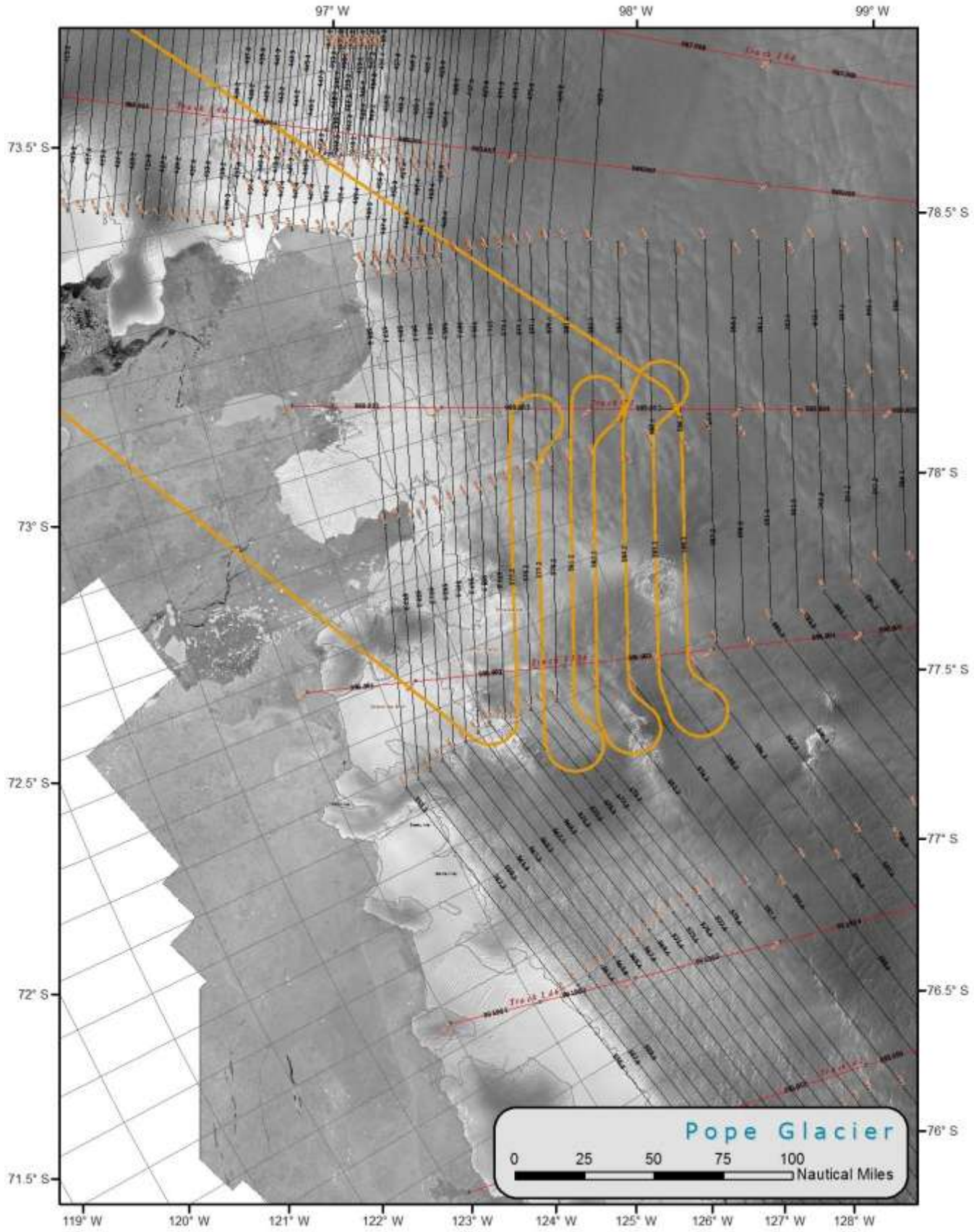
POS/AV: Systems worked well. No issues.

LVIScam: Non-operational during first 2 grid lines. Elsewhere, cameras worked well.

G-V on board data: System worked well.

Mt. Takahe, near Pope Glacier beneath the G-V wing from 41,000’

(Photo credit: Michelle Hofton)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127° W
128° W
Pope Glacier
0 25 50 75 100
Nautical Miles